

REMARKS

In response to the Office Action, Applicant respectfully requests the Examiner to reconsider the above-captioned application in view of the following comments.

Discussion of Claim Rejections Under 35 U.S.C. § 103

Claims 1-2, 5-8, 11, 17-21 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Uber, III et al. (US5,840,026). Applicant respectfully submits that pending Claims 1-2, 5-8, 11, 14-17 are allowable over the cited reference as discussed below.

Discussion of Patentability of Independent Claims 1, 8, and 11

Claims 1, 8, and 11 recite, among other things: (i) a variable pattern includes a data of a predetermined injection time, (ii) the variable pattern is modified by moving said pattern vertically depending on a total amount of contrast medium while the predetermined injection time is kept unchanged, (iii) the contrast medium is injected based on the modified variable pattern. In rejecting the claims, the Examiner asserts that "No where in the specification does Uber disclose or even suggest altering the injection time as a whole" in previous Office Action. Despite Applicant's explanation that Uber discloses "The Electronic Control System...determines...injection parameters such as flow rates, volume..." (Column 5, lines 30-33), and also discloses "...modify the concentration of the contrast media, injection rate, and/or total volume during the injection procedure." (Column 3, lines 29-32), the Examiner maintains his position that injection rates and volumes can be modified without change to the overall injection time. However, as explained below, Uber requires that the injection time be flexible.

Uber defines all parameters such as concentrate of the contrast media, flow rate, volume, time delay, and duration of injection as an effected parameter (Column 5, lines 28-32, and TABLE 1). For example, under the condition that only contrast-medium volume is increased with the flow rate unchanged, calculated injection time will become long. Whereas, under the condition that only the volume is decreased with the flow rate unchanged, calculated injection time will become short. Further, Uber teaches the feedback system to modify the parameters during the injection procedure. (Column 3,

lines 31-34) Therefore, in Uber, the injection time will vary in accordance with a number of factors, and is unpredictable.

In Uber's method, depending on some situation, it may be possible to modify injection rates and volumes without a change to the overall injection time. However, a person with the ordinary skill in the art would not see any reasonable success rate to obtain the same injection time repeatedly. Thus, Uber does not disclose or suggest keeping the overall injection time unchanged when the total amount of contrast medium is increased or decreased. Therefore, Applicant respectfully submits no prima facie showing of obviousness has been established with respect to Claim 1, 8, or 11,

The Examiner further asserts that the disclosure of Uber would make the claimed specific pattern of the injection rate recited in claims 1, 8, and 11 obvious to try. Applicant respectfully submits that to reject a claim based on the limitations of the claim being obvious to try, the Examiner must articulate findings that at the time of the invention "a recognized problem or need in the art" existed, "a finite number of identified, predictable potential solutions" existed, and "one of ordinary skill in the art could have pursued the known potential solutions with a reasonable expectation of success." *See Examination Guidelines for Determining Obviousness under 35 U.S.C. 103 in View of the Supreme Court Decision in KSR International Co. v. Teleflex*, 72 Fed. Reg. 57,526, 57,532 (October 10, 2007).

Applicant respectfully submits that Examiner does not articulate a finding that there had been a recognized problem or need in the art at the time of the invention. According to the present invention, since the predetermined injection time is unchanged, the injection time, which is duration for injection, will become constant even if the total amount of contrast medium is increased or decreased. This means that peak time, which is time at which the value of time-contrast enhancement curve becomes the highest, in each time-contrast enhancement curve will become almost same time. In the image diagnosis, for example in order to observe patient's disease for a long period, plenty of image diagnoses would be conducted. In such case, it is important to obtain high repeatability of enhancement. On the contrary, Uber teaches "...modify the concentration of the contrast media, injection rate, and/or total volume during the injection procedure" (Column 3, lines 29-32), which would deteriorate the repeatability of enhancement. Thus, the cited reference fails to recognize the particular need to

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obtain high repeatability of enhancement. Accordingly, Applicant respectfully submits that no *prima facie* case of obviousness has been established with respect to Claims 1, 8, or 11, and thus each of Claims 1, 8, and 11, is allowable over the prior art of record.

Discussion of Patentability of Dependent Claims

The rest of the rejected claims depend from base Claim 1, 8, or 11, and further define additional technical features of the present invention. In view of the patentability of their base claims, and in further view of the additional technical features, Applicants respectfully submit that the dependent claims are patentable over the prior art.

CONCLUSION

In the light of the applicant's foregoing Remarks, it is respectfully submitted that the present application is in condition for allowance. Should the Examiner have any remaining concerns which might prevent the prompt allowance of the application, the Examiner is respectfully invited to contact the undersigned at the telephone number appearing below.

No Disclaimers or Disavowals

Although the present communication may include alterations to the application or claims, or characterizations of claim scope or referenced art, Applicant is not conceding in this application that previously pending claims are not patentable over the cited references. Rather, any alterations or characterizations are being made to facilitate expeditious prosecution of this application. Applicant reserves the right to pursue at a later date any previously pending or other broader or narrower claims that capture any subject matter supported by the present disclosure, including subject matter found to be specifically disclaimed herein or by any prior prosecution. Accordingly, reviewers of this or any parent, child or related prosecution history shall not reasonably infer that Applicant has made any disclaimers or disavowals of any subject matter supported by the present application.

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Please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410.

Respectfully submitted,

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